HAER No. WA-116-C

Puget Sound Naval Shipyard, Portal Gantry Crane No. 51
Central Industrial Area, Farragut Avenue
Bremerton.
Kitsap County
Washington

PHOTOGRAPHS

WRITTEN HISTORICAL AND DESCRIPTIVE DATA

Historic American Engineering Record
National Park Service
Western Region
Department of the Interior
San Francisco, California 94107

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HISTORIC AMERICAN ENGINEERING RECORD

PUGET SOUND NAVAL SHIPYARD, PORTAL GANTRY CRANE No. 51

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Location: On Farragut Avenue; bounded on the west by State Highway No. 304 and Montgomery Avenue, on the north by First Street, Gregory Way, and Burrell Street, on the east by Pacific Avenue and Sinclair Inlet, and on the south by Sinclair Inlet, Puget Sound Naval Shipyard, Kitsap County, Bremerton, Washington.

USGS Bremerton West Quadrangle 7.5 Minute. (Numerous locations throughout the Shipyard)

Date of Construction: 1941

Engineer: Unknown

Builder: Washington Ironworks, Seattle

Present Owner: U. S. Government, administered by the Department of Defense/U. S. Navy, Bremerton, Washington.

Present Use: Traveling portal gantry crane with a rotating boom used for a variety of ship repair purposes and lifting of material and supplies onto and off of ships, both at the piers and in the drydocks.

Significance: Portal gantry crane No. 51 is representative of the fifteen gantry cranes at the Puget Sound Naval Shipyard. The cranes are the principal hoisting devices at the Yard, providing nearly all of the lifting of material and supplies onto and off of ships, both at the piers and in the drydocks. Unlike most naval shipyards, nearly all of the major ship repair and ship building facilities of the Puget Sound Naval Shipyard are served by an interconnected system of rail track on which the cranes travel, providing greater flexibility in the distribution and arrangement of the cranes. Thus, since World War II the portal cranes have been an essential and fundamental element of the workings of the industrial section of the Shipyard.

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Historical Background

Puget Sound Naval Shipyard

The Puget Sound Naval Shipyard was founded in 1891, two years after the Naval Act of 1889 signaled a new departure in American naval policy through the construction of a seagoing battleship fleet. The fleet was instrumental in the acquisition and protection of America's overseas possessions. To build and repair naval ships the United States established bases and ship repair facilities overseas and domestically. One of the first on the West Coast was the Puget Sound Naval Shipyard in Bremerton, Washington.

From the outset the most important aspect of the Naval Shipyard was its ship repair facilties, or industrial yard. The completion of Drydock No. 1 in 1896, and other subsequent ship repair facilities, was extremely important as it made the shipyard the only one on the West Coast with the capacity to repair America's growing Pacific battleship fleet. As early as World War I the Shipyard possessed the major components required of a naval ship repair facility, including a crane rail system that was begun very early in the development of the Yard as shown on the 1904 yard plan serving Drydock #1. With the development of the yard, the crane rail system was extended to serve other drydocks and piers.

By the mid-1930's the gathering of storm clouds over Europe and Asia saw an increase in funding for military preparedness and subsequent ship building activity. One of President Franklin Roosevelt's first acts in office was the signing of Executive Order 6174 allocating $238 million in National Recovery Administration funds for ship

construction, which increased shipbuilding and repair activity at Puget Sound Naval Shipyard.

When Japan attacked Pearl Harbor the Puget Sound Naval Shipyard was only one of two naval shipyards on the West Coast which was fully operational. It was, in addition, the only battleship repair yard on the Pacific Coast. The Shipyard became the principal repair establishment for war-damaged battleships and air craft carriers as well as smaller warships of the Pacific fleet. (Five of the eight battleships bombed at Pearl Harbor were repaired at the Yard.)

Portal Gantry Cranes

The piers, and drydocks and other ship repair facilities in the Shipyard, are located on Farragut Avenue in the central industrial area (CIA). The onset of the Second World War increased activity in the CIA considerably, resulting in the construction of numerous shipbuilding and repair facilities in the Yard. Portal gantry cranes, built by the Washington Ironworks of Seattle, were representative of the shipbuilding and repair machinery acquired by the Shipyard during the 1940's to accomdodate the increased urgencies of wartime activity.

The principal hoisting devices of the Shipyard are the portal gantry cranes. As a group, the cranes are essential and fundamental elements of the workings of the Shipyard. The cranes provide nearly all of the lifting of material and supplies onto and off of the ships, both at the piers and in the drydocks. Unlike most naval shipyards, nearly all of the major ship repair and ship building facilities of the Puget Sound Naval Shipyard are served by an interconnected system of 20-gauge rail-track on which the cranes travel. This standardization has provided greater flexibility in the distribution and arrangement of the cranes. The Yard is

currently served by 15 twenty-gauged portal cranes with varying tonnage capacities.

The portal cranes are characterized by heavy steel platforms 15 to 52 feet high that are supported by four steel legs with steel wheels. The legs form a rigid frame with the platform as a base for the cranes. The cranes have a large steel housing, 10 feet by 30 feet by 50 feet, often with a row of windows on a side. The capacity of the cranes varies from 8.9 long tons to 50 long tons. A good majority of the traveling portal cranes were acquired during the Second World War.

The cranes at the Shipyard are grouped into nine types:

22
34
35
42,43
50,51,53,54
55,56,57
74
75
76

Gantry Crane No. 51

Crane No. 51 is a 26-ton capacity revolving crane similar to cranes 50, 53 and 54, with a working weight of 320,000 lbs. Crane 51 has a 75 foot boom (weighing 12,356 lbs.) attached to a machinery house that sits on a gantry standard (weighing 45,688 lbs.) 45 feet in heighth. The main hoist capacity is 60,000 lbs. with a wire rope length of 1050 feet. The auxillary hoist capacity is 18,000 lbs. with a wire rope length of 425 feet. The boom hoist has a wire rope length of 625 feet

The boom is fabricated with the main cord angles of alloy steel of the standard box girder type, and thoroughly braced with angle iron latticing. The boom is attached to the

crane cab or machinery house that is contructed of light steel shapes and angles, and covered with sheet metal. All machinery and operating units are enclosed in this house. The cab or machinery house sits on the main gantry that is formed by four wide-flanged beams, rigidly braced with sub members and gusset plates of riveted and welded construction. The machinery platform is constructed of structural steel shapes and plates to form a rigid base for the machinery, and stiffened to form the anchors for the A-frame and boom. The machinery platform is covered with checkered steel floor plates, except where the hoisting units are located.

SOURCES OF INFORMATION

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